

CLAIMS:

I claim:

1. A method for the preparation of putamen ovi having a grain size of less than 0.1 mm  
5 comprising:

washing egg shells with purified water while stirring, said washing occurring at at least an  
ambient temperature;

autoclaving said egg shells;

drying said egg shells; and

10 crushing said egg shells to the desired grain size.

2. The method of claim 1, wherein said egg shells are from *Gallus domesticus*

3. The method of claim 1, wherein said step of crushing said egg shells to a desired grain size  
15 comprises:

grinding said dried egg shells with a pin-disk mill; and

screening said ground egg shells with a mesh size of 0.1 mm × 0.09 mm.

4. The method of claim 1, wherein said step of autoclaving comprises autoclaving at greater  
20 than 1 atmosphere for at least 6 hours.

5. Putamen ovi made by the process of claim 1, and having a grain size distribution of :

> 0.05 mm 35 % by weight, and

< 0.01 mm 65 % by weight.

25 6. A medicament for treatment of a disorder selected from the group consisting of bone marrow  
development disorders, bone marrow dysfunctions and dyshematopoiesis, osteopenia, dental build-up  
disorders, spasmophilia, bone fractions, callus formation, calcium deficiency symptoms during

growth, calcium deficiency symptoms during pregnancy, calcium deficiency symptoms during postmenopause, and calcium deficiency symptoms during nursing period, said medicament containing putamen ovi made by the process of any one of claims 1-4.

5 7. A medicament according to claim 6, for the therapy of leucocytopenia, granulocytopenia, lymphocytopenia, thrombocytopenia, erythrocytopenia, for therapy in immunoglobulin deficiency conditions, or for cellular immunostimulation.

10 8. A medicament according to claim 6, for the stimulation of the metabolic performance of osteoblast-specific transcription factors, of the differentiation of precursor cells to osteoblasts, or for the stimulation of the provision of bone-specific alkaline phosphatase or collagens, or of osteopontin and osteocalcin.

15 9. A medicament according to claim 6 in the form of putamen ovi pulvis and in extracted form, by aqueous and/or organic and/or supercritical solvents, especially carbon dioxide, as powder, granules, capsule, tablet, coated tablet, pastille (lozenge) or paste.

20 10. A medicament according to claim 6, for oral or local application as a material for bone remodeling and implantation; for use a bone cement and bone replacement with an osteoneogenesis-active potential for local bone formation; for the reconstruction of bony deficiencies; for use in the healing of fractures; for use in the filling of bone damages after tumor operations; for the removal of bone damages in oral surgery and plastic surgery of the face (bone atrophy caused by old age with loss of teeth; for the improvement of the bone conditions in the jawbones; for use in the prosthetic supply of denture, implants), or in premature tooth and bone substance losses in young patient; or for  
25 the local induction of osteoneogenesis by the application of extracorporal shock waves in combination with oral (systemic) administration of putamen ovi for additive enhancement of the osteoneogenetic potential.

11. A method for the treatment of bone marrow development disorders, bone marrow dysfunctions and dyshematopoiesis, osteopenia, dental build-up disorders, spasmophilia, bone fractures, callus formation, calcium deficiency symptoms during growth, calcium deficiency symptoms during pregnancy, calcium deficiency symptoms during postmenopause or calcium deficiency symptoms during nursing period, comprising administration of putamen ovi according to any one of claims 1 to 4 to a patient in need thereof.

12. The method according to claim 11, wherein the patient is suffering from organ and tissue damages caused by radiation, infections, or chemical damage bone and cartilage genesis disorders, disease of the locomotor system, the thymus, the spleen and the lymph nodes, the liver, the pancreas, or the kidneys, immunosuppressed conditions, hyperlipoproteinemia or hyperlipidemia.

13. A method according to claim 12, wherein said cellular immunostimulation, comprising increase in the cell numbers of one or more of leucocytes, thrombocytes, erythrocytes, polymorphonuclear granulocytes and lymphocytes, T, B, helper, suppressor and NK (natural killer) cells in the terminal vascular system, causes at least one of

- (a) an increase of vital lymphocytes to be seen in the cortex zone and the follicles of Peyer's plaques intestine), said increase in vital lymphocytes being accompanied by a secretory induction of sIGA in the small intestine,
- (b) an increase of all hematopoietic elements to be detectable in the bone marrow,
- (c) a cellular stimulation of immunocompetent cells to be detectable in the thymus, spleen and mesenterial lymph nodes, or

- (d) a clear activation of the metabolic functions of liver, pancreas and kidneys, including lowering of the serum values of creatinin, uric acid, glucose, bilirubin, cholesterol and triglycerides as well as GOT, GPT and GGT.

5 14. A method according to claim 11, wherein the patient is suffering from primary or secondary disorders or damages  
of chondral or desmal ossification,  
of the bony substance with external Substantia corticalis (lamellar bones) and internal Substantia  
spongiosa (framework of minute trabeculae) as well as bone marrow due to a reduction of  
10 all hematopoietic cell forms (bone marrow aplasia, depression or bone marrow metastases)  
due to a cytostatic or radiologic therapy or after radiation accidents,  
of the skeleton including osteocytes, intercellular substance with collagenous fibrils and calcified  
cement, or  
of bone metabolism including the function of osteoclasts and osteoblasts, and the balance between  
15 bone absorption and formation (bone tissue remodeling).

15 15. A method according to claim 14, wherein the patient is suffering from primary or secondary disorders or damages of chondral or desmal ossification, and putamen ovi is administered in combination with sodium fluoride and hormones, calcitonin, pyrophosphates, or vitamins.

20 16. A method according to claim 14, wherein administration of putamen ovi stimulates the metabolic performance of osteoblast-specific transcription factors, or the differentiation of precursor cells to osteoblasts, or simulates the provision of bone-specific alkaline phosphatase, collagens, and of osteopontin and osteocalcin.

25 17. A method for cellular immunostimulation following immunosuppression after radiation or chemotherapeutic treatment, comprising administration of a medicament according to claim 6.

18. A method for the stimulation of osteoneogenesis or for early callus formation in dentistry, oral and bone surgery, comprising oral or local application of a medicament according to claim 6.

19. A method for malignant tumor treatment, including the treatment of primary and secondary bone tumors with osteoclastic or osteolytic metastases, of tumor-like bone defects with intra-ossal space occupation, or for the treatment of bone cysts, comprising administration of a medicament according to claim 6 as an oral adjuvant, alone or in combination with cytostatic agents or radiation therapy.

20. A method for the treatment of AIDS and diseases with suppressed immune system, comprising administration of a medicament according to claim 6 as an oral adjuvant, alone or in combination with cytostatic agents or radiation therapy.

21. A method for increasing the tolerance for chemotherapy, cytostatic and radiologic therapies, for inhibiting the bone substance destruction due to diuresis and saluresis, or as an adjuvant of analgesia, comprising administration of a medicament according to claim 6 .

22. A method according to claim 21, wherein said medicament is administered in combination with chemically defined substances selected from cytostatic agents, such as cisplatin, cyclophosphamide, methotrexate, fluorouracil, bleomycin, or diuretics, such as acetazolamide, hydrochlorothiazide, chlorothalidone, furosemide, amiloride, or as a pharmacological component of the positive influencing of interactions between the endocrine, nervous and immune systems.

23. A method for the inhibition of bone decalcification upon daily cigarette consumption, comprising administration of a medicament according to claim 6.

24. A method for the additive treatment of hyperlipoproteinemias, especially hypercholesterolemia and/or hypertriglyceridemi, comprising administration of a medicament according to claim 6.

25. A method for the treatment of anemia, comprising administration of a medicament according to claim 6.

26. The method according to claim 9, wherein putamen ovi preparations are employed together with mistletoe (*Viscum*) extracts, *Echinacea* extracts, especially dry extracts (*E. pallida* and *E. angustifolia*), artichoke (*Cynara*) extracts and/or nettle (*Urtica*) extracts, especially dry extracts from the roots, leaves or herbs, further with birch leave (*Betula*) extracts and with horsetail (*Equisetum*) extracts and with dandelion (*Taraxacum*) extracts, also in combination with chemically defined diuretics/cytostatic agents, for the inhibition of bone demineralization and/or depression.